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'dynamic' and 'sympathetic' beauties. The mediate inner beauty, on the other hand, depends upon secondary characteristics of the object, chiefly upon type, purpose and imitativeness.

At this point the general theoretical part ends, and the special arts are studied. From the standpoint of pure psychology the abandonment of esthetic types in favor of expression types may seem heretical; we find the treatment of the tragic, the comic, the sublime and so on subordinated to study of (I.) 'ideomimetic' arts, (II.) 'free' arts and (III.) speech and thought. The mass of information and the amount of criticism displayed are quite remarkable and make reviewing impossible.

The general impression made by the whole work is that it is neither eccentric nor revolutionary, but rather a sane and capable presentation of esthetic problems, worthy of perusal by specialist and student alike.

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La Psychophysiologie du langage musical. JOSÉ INGEGNIEROS. *Revue de Philosophie,* April, 1906. Pp. 386–408.

By musical language Dr. Ingegnieros means employment of the tones of the musical scale and of their conventional symbols in singing or in playing on musical instruments, and the imagery used in thinking of these various activities either in recall or in composition. His object in this article is to describe its origin, growth, physiological and psychological mechanism, and modifications in individuals. This he accomplishes chiefly through comparison with the more closely and extensively studied phenomena of ordinary speech or, as he terms it, articulate verbal language. He points out, to begin with, that both verbal and musical language, especially after they have assumed graphic form, involve complex and constant coordinations, a definite system of symbols.

His statement of the vexed question of the origin of language, whether verbal or musical, is brief. The view is upheld that both originate in reflex sounds, and are not separated in the earlier stages, all language having musical inflections or cadences. Later comes simple melodic elocution, as in the lyric *recitatif* of the Greeks. Gradually words and music become separated; melody without words emerges; the simple rhythmic accompaniments which make up the instrumental music of primitive peoples are replaced by melodic instruments; and we have two parallel series—speech for the expression and communication of ideas, and music, vocal and instrumental, for the expression and communication of sentiments and emotions. The resemblance of this theory to Spencer's is obvious, though music is made coordinate with speech and not merely derivative from it. With the progressive evolution of both speech and music appears a new stage in each, that of written symbols, developing from a rudimentary to a well-organized system.

These two stages, of spoken and of written language, are manifested in each individual. There is first a natural or spontaneous education in spoken language and in singing and, perhaps, in playing some instrument by ear; second, a technical education in the reading and writing of verbal and musical symbols and, in the case of music, a further technical training in playing upon one or more musical instruments.

In spontaneous musical language without technical training, only two kinds of musical images can be employed, auditory and phonic, or motor images of articulation in singing. A person of the auditory type in recalling or composing music hears mentally; a person of the phonic or articulatory type sings mentally. With technical musical training other types of imagery enter in, although the auditory and the phonic types probably remain dominant. A person may have visual images of the score, may read music mentally; he may have motor images of execution upon some particular instrument; he may have graphic-motor images, of writing the appropriate notes, although this is rare save in the case of a few composers or of copyists of music; he may avail himself more or less indifferently of all types, though the evidence goes to show that the conspicuously musical have one predominant type. The musical imagery employed, of whatever type, depends, like all imagery, partly on native equipment, partly on education. Visual imagery of musical notation and motor imagery of instrumental performance and of writing music are, of course, in these specific forms, due to education, although developed upon a basis of natural predisposition.

Dr. Ingegnieros maintains that those naturally of the auditory type may be persistent practise in singing or playing change to the auditory-motor, or even to the pure motor type, either phonic or instrumental. In the case of musical visualists, those singing or playing from mental score, visual images may with practise be supplanted by motor. Such persons make little use of auditory imagery; they have not 'good ears'; yet by means of motor images they are able to sing or to play correctly without dependence on the written score. He would hardly assert, however, we presume, that such musical visualists possess the musical ability of persons of the auditory type. This evidence, if borne out, tends to show that in learning a complex act the drift in imagery is not necessarily from 'resident' to 'remote,' as is sometimes held. It supports the view of Angell and Moore[1] that attention fastens upon the more complex and less easily controlled phase of the coordination. In general it shows that the sensory nature of the cue-image is relatively indifferent, so long as it serves its function.

Dr. Ingegnieros gives the order of frequency in musical imagery as follows: For those without musical training, (1) auditory, (2) phonic or articulatory, (3) complete or indifferent; for those with musical training, (1) auditory, (2) phonic, (3) instrumental-motor, (4) visual, (5) graphic, (6) complete or indifferent. As is readily seen, the types of imagery used in musical language correspond closely to those used in ordinary language. In ordinary speech, however, there is nothing corresponding to the motor images of instrumental execution, except in the cases of typewriting, compositing, etc. Dr. Ingegnieros mentions such cases as parallel, but makes much of this additional complex coordination involved in musical language, saying that it 'has never been mentioned nor described until now.' However this may be, the process of learning to play on a musical instrument does not differ essentially from learning to perform any complex skilful act; and such a process has of late been subjected to experimental control and abundantly described by Swift, Bair, Leuba and others.

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[1] *Psychological Review,* Vol. III.

With regard to the cerebral conditions governing musical language the writer agrees with the accepted authorities in asserting that the musical centers are subcenters of the corresponding areas for verbal language. He bases his statement that they are functionally specialized as well as intimately connected with the general language centers on the well-known fact that aphasia is sometimes accompanied and sometimes unaccompanied by amusia. But he does not canvass the available data nor add any new pathological evidence. He also raises the question as to how far bimanual instrumental execution and musical language in general are controlled by the left hemisphere of the brain, and holds it still unproved that such specialization is rigid either for verbal or for musical language. He seems unfamiliar with Baldwin's chapters on the 'Origin of Right-Handedness' and on 'Internal Speech and Song in Mental Development'; and in general makes no reference to the large literature on the function and disorders of speech and to the lesser, but respectable, literature on musical imagery.

The article gives a clear description of the recognized facts of musical language, but it presents no new experimental or pathological data, and suggests that there is still room for thorough investigation of the subject. It assumes that the facts of localization and imagery are simpler and more definitely established than the recognized authorities hold them to be, and hardly does justice to their functional aspects, either physiological or psychological.

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La beauté rationelle. G. BERTIER. *Revue de Philosophie,* April, 1906. Pp. 409-414.

This article is a brief statement of the cardinal principles of Souriau's 'La beauté rationelle,' published in 1904; and any appraisal of it must either take the attenuated form of reviewing a review or go back to the original treatise. Souriau's main contention is that beauty is not 'merely subjective,' a matter of individual sensation, taste and sentiment, but is due to the control and organization of these elements by the 'laws of reason,' by judgments of universal validity. This organization reveals itself to consciousness as evident—immediately manifest—perfection. And the essence of perfection resides in the adequate realization of the appropriate end. All ends, however, are not of equal esthetic importance. That has greatest esthetic value which contributes most fully to the conscious life of man.

The phraseology employed is so foreign to that of current esthetic theory as to give a somewhat quaint and formal tone to both book and article.